# Reciprocal Recurrent Selection: A Strategy to Development Superior Apomictic Hybrids in *Brachiaria Decumbens*

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The breeding of *B. decumbens* was restricted to interspecific crosses using the cultivar Basilisk as pollen donor due to the lack of compatible sexual ecotypes within the species. Recently, with the chromosome duplication of a sexually reproducing diploid accession, it was possible to carry out intraspecific crosses. Four hundred and fifty seven intraspecific hybrids, obtained from crosses between three sexual plants artificially tetraploidized by colchicine and the apomictic tetraploid cv. Basilisk, compose the base population of this work. This paper reports part of the research to obtain superior apomictic hybrids in *B. decumbens* using reciprocal recurrent selection, a cyclic breeding strategy. The methodology involves progeny production through crosses; evaluation and selection of these progenies for agronomic traits, nutritional value and resistance to spittlebugs; recombination of selected progenies and identification of superior apomictic hybrids. Of the 457 hybrids in the base population, 153 had the mode of reproduction characterized. Of these, 80 were sexual and 73 apomictic, a result that is consistent with a monogenic dominant inheritance of apomixis. Crosses between the 80 sexual tetraploid plants and the apomictic cultivar Basilisk were performed in a crossing block and full sib progenies have been produced (1st year). The percentage of filled seed ranged from 0.0% to 20.7% across sexual plants, with an average of 3.96%. These results showed that the percentage of filled seeds produced by artificial crossing, was very low in intraespecific *B. decumbens* crosses. The seeds were germinated and 1,415 hybrids have been produced. These progenies are currently being evaluated in field trials for agronomic traits, nutritive value and resistance to spittlebugs in order to select superior ones (2nd year). In each selection cycle superior apomictic hybrids shall be identified to proceed to cultivar development in order to promote grassland diversification through the identification of improved cultivars. The recombination of selected sexual genitors that gave rise to the elite progenies will be done in a crossing block in the third year.

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